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ORIGINAL ARTICLES.

Tubercular Peritonitis—Medically and Surgically Considered.

BY J. W. FELTY M.D., ABILENE, KANSAS.

Read at the Thirty-first Annual meeting of the Kansas Medical Society, Topeka, May 12-14, 1897.

In March, 1882, at a meeting of the Physiological society of Berlin, Koch announced to the world the discovery of the tubercle bacillus. It was at this time that he gave satisfactory experimental evidence as to its etiological relation to tuberculosis in man and the susceptible lower animals. This achievement, the result of patient and intelligent scientific research, will always mark an era in the history of medicine. It is now generally recognized that tuberculosis is a specific infectious disease due to tubercle bacilli. It is from this date that we have made our strides in truly scientific medicine. It is here that we enter the field of bacteriology which in fifteen years has grown to massive proportion and the study now enlists the greatest scientific minds of the age. Whatever errors Koch may have made in his earlier investigations, the discovery of toxin in cultures of this bacillus which is soluble in glycerine, and which in very minute doses produces febrile reaction and other symptoms when injected subcutaneously into tuberculous animals, must ever rank as one of first importance in scientific medicine, in fact in all scientific research. From this point we see a brilliant future in a field of medicine which was heretofore largely empirical.

No Americans are entitled to more praise and encouragement along this line of investigation and observation than Dr. Victor C. Vaughn and Dr. George M. Sternberg, and the points I now present to you are based largely upon the recent papers of Vaughn and Sternberg.

In the few minutes allotted for this paper I have selected the subject of the treatment of tubercular peritonitis because of its great importance to the general practicioner, not because the author has a new theory to advance. My experience in the treatment of tubercular peritonitis with nucleins has been unique and hence this paper.

In discussing this subject, the first natural question which comes before us is, what are nucleins, and what is the modus operandi of nucleins in the blood? At this point I must take for granted the generally accepted pathology of tuberculosis is understood, and hence will discuss only the effect of nucleins in the blood. What then are nucleins? Vaughn says, "Physiologically, nucleins may be said to form the chief chemical constituents of the living parts of cells. Speaking broadly, we may say that the nuclein is that constituent of the cell by virtue of which the histological unit grows, develops, and reproduces itself. It is the function of the nuclein of the cell to utilize the pabulum within its reach. It must be evident that those tissues most abounding in cellular elements contain relatively the largest amount of nuclein. It must also be seen that it is by virtue of their nuclein that the cells of various organs and organisms possess and manifest their individual peculiarities. We should therefore expect to find that the nuclein of the yeast cell is not identical with that of the bacillus tuberculosis, and that the nuclein of the spleen differs from that of the thymus gland. The number of kinds of nuclein is limited only by the variety of cells. Nuclein is the chem-

ical basis of that part of the cell designated by the histologist as the nucleus, sometimes called chromatin on account of the readiness with which it absorbs and holds coloring agents. It is the nuclein of the bacterium which takes up and retains stains, and it is on account of the fact that the nuclein of the bacillus tuberculosis differs from that of other bacilli that we are able to distinguish the former from the latter by tinctorial properties. Differences in reaction with staining agents so plainly seen under the microscope are only outward manifestations of less apparent and more important differences in chemical composition." It thus becomes apparent that nucleins are the ultimate living principles of cell life. "Chemically," Vaughn says, "the nucleins are complex, proteid bodies, especially characterized by the large amount of phosporous which they contain."

It is apropos at this point to say a word or two about natural and acquired immunity. It is generally understood that certain animals are more prone to certain diseases than others, or rather the vital resistance to acquiring certain disease is greater than in others, and upon this principle in bacteriology is based the theory of Metschnikoff which in reality, should be called the theory of Sternberg, for it was the latter who first suggested the principle and published a paper on the subject as early as 1881, when, as a matter of fact the Metschnikoff paper did not appear before 1884. Sternberg as early as 1881, says, "the disappearance of the bacteria from the circulation, in the experiment referred to may be effected by the white blood corpuscles, which, it is well-known, pick up, after the manner of amœbæ, any particles, organic or inorganic, which come in their way." He further adds, "that they may, like an amœbae, digest and assimilate the protoplasm of the captured bacterium, thus putting an end to the possibility of its doing any harm." Whether these deductions should be accepted in their entirety is questionable, but the fact remains the same, the principle involved in the theory was first given to the world by Sternberg in 1881. It is upon this theory that the study of nuclein has been based and I can do no better than to quote from the conclusions drawn from a comprehensive address by Vaughn before the first Pan-American Medical Congress: "The phagocytic theory of Matschinkoff, in so far as it teaches that the polynuclear white blood corpuscles are active agents in preventing or retarding the multiplication of pathogenic germs in the body, is true.

"2nd. The polynuclear corpuscles do not eat the bacilli, but they destroy the germ by virtue of the chemical action of some constituent or secretion.

"3rd. The germicidal properties of blood-serum, demonstrated by Fodor, Nutall, Buchner and others are due to substance or substances that originate in the polynuclear white blood corpuscles.

"4th. The natural resistance of the body to bacterial disease will be strengthened by a physiological increase in the production of polynuclear white blood corpuscles.

"5th. This increase in the polynuclear corpuscles may be induced by introducing into the animal the most destructive of these cells which is nuclein."

With your kind indulgence, I desire to report a few cases of tubercular peritonitis treated by nucleins.

Case I—In February, 1895, Ida L., aged 19, with a tubercular family history, developed a slight cough, and an occasional chill, temperature ranging from 97½ to 102 degrees. As the disease progressed, little change was noticed in her cough, in fact, her cough caused her little annoyance. After four or five months' treatment without any apparent benefit, she developed a pronounced tympanitis with paroxysms of severe pain not confined to any part of her abdomen. It was looked upon as a case of catarrhal condition of the bowels from a faulty digestion, but I soon abandoned this diagnosis. A large quantity of serum accumulated in the abdomen and by repeated examinations of the sputum and other characteristic symptoms, I became convinced that it was a case of tubercular peritonitis. The treatment of the case up to this time was unsatisfactory and I decided to try

Vaughn's yeast nuclein. I injected drachm doses hypodermatically every day, or rather gave subcutaneous injections and intra-peritoneal injections on alternate days. The treatment was continued for six weeks without any apparent benefit except a better appetite and a more persistent and continued rise in temperature. No count was made of white blood corpuscles. Treatment was discarded and the patient died about three months afterwards from exhaustion.

Case II—In May 1895, Emma L., aged 15, a sister of the case just cited also became ill with symptoms very similar to the case whose history has just been given. This case, however, developed less cough, and more pain in abdomen. Tubercular bacilli were present in sputum. The pain became so persistent and severe that the attending physician was induced to give repeated and continued hypodermatic medication with morphia. Temperature ranged from normal to 100½ with copious and exhausting night sweats. The abdomen became very sensitive to touch, particularly over region transverse colon. The bowels became distended with gas and the case bid fair to develop into a condition similar to the one just enumerated. In consultation with this case I again urged the nuclein treatment hypodermatically in drachm doses every twelve hours. In nine or ten days a very appreciable change was noticed. Temperature remained about the same, cough persistent but not so severe, but pain in abdomen lessened, tampany disappeared, night sweats returned but at longer intervals, and the general nutritive disturbance disappeared. Patient's sputum was examined after four weeks of nuclein treatment and bacilli found, but not so numerous. Patient remained under nuclein treatment for five months when cough had entirely disappeared, temperature normal with an exceptional rise upon violent exercise, pain disappeared from abdomen, no sweating at night, and her general constitutional condition was improved so much that at this time she weighed twelve pounds more than at any previous period. She has shown no evidence of any of her previous symptoms and was apparently well when I last saw her thirty days ago.

Case III—In January 1896, Lula B., (colored) aged 10, was brought to the office on account of a large swelling in the neck with a slight cough. Upon examination I found large tubercular glands in the neck, axillary and clavicular spaces, also in the groins and with infiltration of apex of left lung, temperature 102, with history of loss of appetite and a rapid emaciation. Two weeks after my first examination one of the large glands in the neck developed into a large abscess which was opened and drained and it seemed to act like a crater in a volcano—the system seemed to be surcharged with tubercle, and as soon as the system could find a vent, the cough disappeared and the infilteration in left apex, while present, seemed to cause little or no irritation. In a month or two after the abscess was opened she developed a slow, insidious, but progressive soreness over abdomen. Up to this time I placed her upon a supporting and stimulating diet with little or no medicine. I now began to administer half drachm doses of nuclein hypodermatically once a day, and drachm doses three times a day by the stomach. The subcutaneous medication was discontinued after two weeks and internal medication in drachm doses continued for ten or eleven weeks. She seemed to make progress as soon as the nuclein was administered and all the symptoms disappeared until two months ago when she developed a coxalgia and is again under the nuclein treatment at this writing.

Case IIII—Miss B., aged 26, of tubercular parentage, was examined by a number of physicians and was told she had an ovarian cyst. Temperature was below normal and the history of the case pointed to some acute abdominal trouble eight or nine months before. Upon a more extended examination of the case I became convinced that she did not have a cyst, but that she had, and now has, a localized walled off tubercular peritonitis. She has taken a drachm and a half of nuclein three times a day for sixty days, and while little or no important improvement exists in the abdominal disease, she is

increasing in weight and is in better health than at any time since her primary abdominal attack. It is too early to predict in this case, but the fact that her general constitutional condition is much improved, bids fair to remove the disease entirely. If, in course of time, this tubercular condition does not disappear, I shall make an abdominal section.

I now enter upon another domain in medicine.

The surgeon finds in his clinical experience three forms of tubercular peritonitis—ascitic, fibrous, and ulcerating or casuous. The two latter forms are more common and inoperable, while the former least common, and at times operable. This form of tubercular peritonitis is generally found with fluid encysted or diffused throughout the general abdominal cavity. Grayish white granulations are abundantly distributed throughout the diseased portion of the serous membrane. The fluid is generally clear, pale yellow in color whether the disease be general or local, and on account of being generally encysted is often mistaken, particularly where the fluid is copious, for ovarian cyst.

Greigg Smith in his recent work on Abdominal Surgery says: "The operative treatment of tubercular peritonitis has been stumbled on by accident, rather than carried out by design. A good many cases of operation for encysted cases of this disease have been performed by mistake for ovarian dropsy and other allied conditions. Many of these cases were found to recover, and hence cœliotomy for tubercular peritonitis of a certain class has become to be carried out with deliberate purpose as a mode of treatment promising success."

Just how abdominal section cures these cases still remain subjudice, and until we do, the techinque of the operation remains uncertain. Morris believes that certain bacteria enter during an operation from the air, thereby creating a putrefaction or chemical change—a toxalbumin which is fatal to tubercular bacilli. On the other hand, the operation per se is believed to be sufficient to bring about a traumagor a modified form of inflammatory product, and thus bring about the usual result. In the case upon which I operated a few years ago and which I believed was an ovarian cyst, but which I found was a tubercular cyst of broad ligament, cæcum and adjacent structures, I removed the fluid, washed out the sac with a solution of boro-glyceride, an ounce to the pint, and closed the abdomen without drainage. The case made a beautiful recovery, and no return of the disease since. My judgment would suggest drainage in such cases, and had I known the exact diagnosis at the time of operation I should certainly have drained, but not until four or five days after operation did I learn from the microscopist that the fluid and sac contained tubercular bacilli. To drain or not to drain under the present status of clinical experience remains for the operator to decide in each individual case. Statistics on the subject are meager and not based upon recent advance in surgery.

The law of immunity, and I believe there is a law which pervades animal life, remains a hidden secret. Why man should get typhoid fever by drinking water from a certain well and his horse should not become similarly affected; why one attack of smallpox gives immunity to another attack still remain unsolved mysteries. The study of prevention of disease by making the body immune to the various diseases must remain the study of the century, but the physician of to-day who neglects the study of bacteriology, immunity, serum-therapy and allied scientific research will hardly comprehend the study of medicine twenty-five years hence.

DR. H. Z. GILL, who has been elected secretary of the State Board of Health, will be Professor of Histology, Microscopy and Bacteriology in the Kansas Medical College.

DR. J. W. FELTY, formerly of Abilene, Kas., and one of the most capable and prominent physicians in the state, has removed to Pennsylvania, where he will reside.

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Topeka, Kansas, Saturday, July 3, 1897.

IT is more than likely that we will soon begin to appreciate the value of sewers and sewer connected closets, especially in districts where the people are compelled to depend upon wells for their water supply. The month of June has been exceedingly wet. Much more than the usual amount of rain has fallen and most of the wells will necessarily be contaminated with surface water. The drainage from privy vaults and stables will undoubtedly bring the amount of animal matter in the well water up to the danger point. A few years ago the unfortunate epidemic of typhoid fever in Topeka was traced to just such sources. At the present time there are privy vaults in use in the heart of the city with no sewer connections. There are also many wells in use in the thickly settled portions of the city. It seems time that some investigation of these things should be made and if possible the wells condemned and property owners compelled to connect the closets with the sewer. In the smaller cities where there is no sewerage system there is little protection unless extreme care is used in the location of wells and their proper enclosure. Wherever surface drainage is permitted to enter the well, there is necessarily danger of infection.

FROM the announcements already received it would seem that western medical colleges are not likely to enforce the four-year regulation announced last year. It has been learned since the announcement was made that it could not be a unanimous rule and it is now a question if any of the western schools will stick. We are not yet ready for such a requirement. It must be adopted finally, but more preparation is needed. The association found it impossible to enforce its rulings two years ago. It will find now a number of delinquent members if the regulation is to be enforced this year.

WE have a good chair, wood frame, full leather and nickel trimmings, stirrups and knee rests, capable of being put in any position required, which we will sell for $30. It is in good condition and looks as well as new. Address this office.

DR. H. Z. GILL was elected secretary of the State Board of Health at the meeting last week. Dr. Gill was vice-president of the Kansas Medical Society and president at the last meeting.

THE Eastern Kansas Medical Society will meet at Leavenworth, Kas., July 20. This is one of the best societies in the state and should be well attended.

DR. C. C. MORGAN of Clay Center, Kas., has been selected to fill the Chair of Pathology in the Kansas Medical College.

Story of the American Medicinal Flora.

The sub-commission of the Pan-American Medical Congress appointed to study the medicial plants of the United States has entered into an association with the Smithsonian Institution for that purpose. The attention of our readers is called to the respective circulars issued by these organizations, which we print below:

SMITHSONIAN INSTITUTION, WASHINGTON, D. C., May 28, 1897.—Dear Sir: The Smithsonian Institution has undertaken to bring together all possible material bearing on the medicinal uses of plants in the United States. Arrangements have been made with a body representing the Pan-American Medical Congress, the sub commission on medicinal flora of the United States, to elaborate a report on this subject, and the material when received will be turned over to them for investigation.

The accompanying detailed instructions relative to specimens and notes have been prepared by the sub-commission:

All packages and correspondence should be addressed to the Smithsonian Institution, Washington, D. C., and marked on the outside, "Medicinal Plants, for the U. S. National Museum."

Franks which will carry specimens, when of suitable size, together with descriptions and notes, free of postage through the mails, will be forwarded upon application. Should an object be too large for transmission by mail the sender is requested, before shipping it, to notify the institution, in order that a proper authorization for its shipment my be made out.

Respectfully, S. P. LANGLEY,
Secretary.

INSTRUCTIONS RELATIVE TO MEDICINAL PLANTS.

The Pan-American Medical Congress, at its meeting held in the City of Mexico in November, 1896, took steps to institute a systematic study of the Ameriean medicinal flora, through the medium of a general commission and of special sub-commissions, the latter to be organized in the several countries. The sub-commission for the United States has been formed and consists of Dr. Valery Havard, U. S. A., chairman: Mr. Frederick V. Coville, Botanist of the U. S. Department of Agriculture; Dr. C. F. Millspaugh, Curator of the Botanical Department of the Field Columbian Museum, Chicago; Dr. Charles Mohr, State Botanist of Alabama; Dr. W. P. Wilson, Director of the Philadelphia Commercial Museums, and Prof. H. H. Rusby, of the New York College of Pharmacy. This sub commission solicits information concerning the medicinal plants of the United States from every one in a position to accord it. The principal points of study are as follows:

1. Local names.

2. Local uses, together with historieal facts.

3. Geographical distribution and degree of abundance in the wild state.

4. Is the plant collected for market, and if so,

(*a*) At what season of the year?
(*b*) To how great an extent?
(*c*) How prepared for market?
(*d*) What is the effect of such collection upon the wild supply?
(*e*) What price does it bring?
(*f*) Is the industry profitable?

5. Is the plant, or has it ever been, cultivated and if so give all information on the subject, particularly as to whether such supplies are of superior quality, and whether the industry has proved profitable.

6. If not cultivated, present facts concerning the life history of the plant which might aid in determining methods of cultivation.

7. Is the drug subjected to substitution or adulteration, and if so, give information as to the plants used for that purpose.

While it is not expected that many persons will be able to contribute information on all these points concerning any plant, it is hoped that a large number of persons will be willing to communicate such partial knowledge as they possess.

It is not the important or standard drugs alone concerning which information is sought. The sub-commission desires to compile a complete list of the plants which

have been used medicinally, however trivial such use may be. It also desires to collect all obtainable information, historical, scientific and eeonomic, concerning our native and naturalized plants of this class, and to that end, invites the co-operation of all persons interested. Poisonous plants of all kinds come within the scope of our inquiry, whether producing dangerous symptoms in man, or simply skin inflammation, or as "loco-weeds," deleterious to horses, cattle and sheep. In this respect, the general reputation of a plant is not so much desired as the particulars of cases of poisoning actually seen, or heard from reliable observers. It is believed that much interesting knowledge can be obtained from Indians, Mexicans and half-breeds, and that, consequently Indian agencies and reservations are particularly favorable fields for our investigation. Such knowledge will be most acceptable when based upon known facts or experience.

In order to assist in the study of the habits, properties and uses of medicinal plants, the sub-commission undertakes to furnish the name of any plant-specimen received, together with any desired information available.

Owing to the diversity in the common names of many plants it will be necessary for reports, when not furnished by botanists or others qualified to state the botanical names with certainty, to accompany the same with some specimen of the plant sufficient for its identification. While the sub-commission will endeavor to determine the plant from any portion of it which may be sent, it should be appreciated that the labor of identification is very greatly decreased, and the usefulness increased, by the possession of complete material, that is, leaf, flower and fruit, and in the case of small plants, the underground portion also. It is best to dry such specimens thoroughly, in a flat condition under pressure, before mailing. While any convenient means for accomplishing this result may be employed, the following procedure is recommended: Select a flowering or fruiting branch, as the case may be, which when pressed shall not exceed 16 inches in length by 10 inches in width. If the plant be a herb 2 or 3 feet high, it may be doubled to bring it within these measurements. If it possesses root leaves, some of these should be included. Lay the specimen flat in a fold of newspaper and place this in a pile of newspapers, carpet felting, or some other form of paper which readily absorbs moisture, and place the pile in a dry place under a pressure of about 20 to 30 pounds, sufficient to keep the leaves from wrinkling as they dry. If a number of specimens are pressed at the same time, each is to be separated from the others by three or four folded newspapers or an equivalent in other kinds of paper. In 12 to 24 hours these papers will be found saturated with the absorbed moisture and the fold containing the specimen should be transferred to dry ones. This change should be repeated for from two to five days, according to the state of the weather, the place where the drying is done, the fleshiness of the specimens, etc. The best way to secure the required pressure is by means of a pair of strong straps, though weights will do. The best place for drying is beside a hot kitchen range. When dry the specimens should be nailed between cardboards or some other light but stiff materials which will not bend in transit.

It is a most important matter that the name and address of the sender should be attached to the package and that the specimens, if more than one, should be numbered, the sender retaining also specimens bearing the same number, to facilitate any correspondence which may follow. The sub-commission requests that, so far as practicable, all plants sent be represented by at least four specimens. (Signed)

H. H. RUSBY, M.D.,
Chairman of the General Commission,
New York College of Pharmacy.

VALERY HAVARD, M.D.,
Chairman of the Sub-Commission,
Fort Slocum, Davids Island, N. Y.

DR. E. B. LAFEVRE of Abilene, Kas., who was a candidate for the appointment as secretary of the Board of Health, was chosen State Microscopist.

Treatment of Colles' Fracture.

Abstract of paper read by Edward A. Tracy, M.D., Boston, Mass., at the Philadelphia meeting of the American Medical Association, June 4, 1897.

In 1814, Colles, of Dublin, published his observations on the fracture, which to-day deservedly bears his name. Previous to that time, this injury practically masqueraded under the description of backward dislocation of the wrist or forward dislocation of the lower end of the radius for such dislocations were considered common by the masters from Hippocrates down. The nearness of the fracture to the wrist-joint, the peculiarities of its anatomical surroundings, the absence of the characteristic sign of fracture, unless specially sought for, and, finally, the teachings of the masters—all served to hinder the recognition of the actual occurrence in this injury—fracture. Therefore to Colles will ever be due our appreciation and gratitude, for the correct diagnosis of this injury, as correct treatment in surgery, is dependent upon right diagnosis even to a greater degree than in medicine.

Since the recognition by Colles of the real nature of this injury, there has been a marked tendency, till within recent years, to overtreat it, with more or less baneful results. Sir Astley Cooper advised that four or five weeks be let to elaspe before passive motion, in the aged, be attempted. He remarked that recovery is slow, it being sometimes six months before the finger motions are restored. Agnew, Bryant, Moullin, Walshe and McClelland, all recognize that the stiffness of the wrist and fingers is due to fibrinous exudations around the tendon sheaths, about the seat of fracture, Bryant states that passive movements ought to be employed by the surgeon at an earlier period than he has been wont to; but he doesn't specify the time. Moullin advises passive movements of the fingers from the first day, and states that to prevent stiffness of the wrist he has begun gentle manipulations on the fourth and fifth days with excellent results. The writer believes that Moullin's instructions should become the general practice. He (the writer), in several cases, after reduction of the fracture, has moulded a piece of wool-fibre splint material over the dorsum of the forearm and hand in a semi-prone position—the hand in line with the forearm. This bandaged over the parts he finds sufficient protection for them. It does not interfere with the passive motion of the fingers from the first, and is readily removed and reapplied to permit of passive motion to the wrist-joint. It is moulded directly over the skin, and requires no padding or compress. In these cases, he has carefully caused passive motion of the wrist-joint from the fifth day and discarded the splint on an average of twenty-four days. It would appear to the writer that the treatment of Colles' fracture would thus be formulated:

1. Reduction, not always easy.
2. Protection, by a simple retentive appliance, while correct reunition of the bones takes place.
3. Passive motion of the fingers and thumb from the first day; of the wrist, carefully, from the fifth day.

Signs and Symptoms of Aortic Aneurism.

With this title Dr. Frederick A. Packard read a paper before the Philadelphia County Medical Society on February 10, 1897. Of aortic aneurism it may be said that in well-marked cases the diagnosis is extremely easy; in other cases it may only be made by careful consideration of signs and symptoms; in others its presence may be suspected but not be capable to define proof; while in others it may be entirely unsuspected.

The signs and symptoms are but poorly adapted to classification, inasmuch as they vary so much in accordance with the seat and relations of the sac. In regard to symptoms, almost none of them are due to the aneurism itself, but most are produced by the influence of the tumor upon neighboring structure. A certain amount of dull pain may be due to the distention of the sac-well itself, but this is usually entirely over-

shadowed by that produced by alterations in parts in the neighborhood. For our diagnosis we must depend not so much upon the physical signs of an arterial tumor as upon those due to an abnormal growth of whatever nature.

The typical signs of aneurism may be said to be tumor, expansile pulsation, thrill, bruit, and shock. Tumor is frequently absent; expansile pulsation is in many situations impossible of detection; thrill is a very uncertain sign; bruit is as often absent as present; while shock, whether diastolic or sysotolic, is frequently absent.

The character of expansion can be determined in thoracic aneurism only when tumor is present. The eccentrically diminishing pulsatory force often suggests the existence of aneurismal tumors, and slips of paper, placed at opposite poles of the expansion area, will often render visible this property when tumor and expansibility are not otherwise demonstrable to the eye or hand. Pulsation in deeply seated aneurism of the aortic arch may sometimes be detected by palpation downward in the epiternal notch or by firm pressure upon the chest, applied during expiration, one hand being placed between the suapulæ, the other over sternum and front of chest. Pulsating empyema can be readily distinguished by the difference in the history of the case, by the absence of other signs of aneurism and by the presence of signs of fluid in the pleural cavity. Thrill and bruit are uncertain signs.

An abnormal area of dullness in the neighborhood of the sternum or in the left spinal gutter is a sign that at once suggests the existance of aneurism.

The writer quotes Stokes as saying that the signs of a typical demonstrable aneurism are those simulating the presence of two hearts beating within the chest; but if we wait for this appearance before making our diagnosis, many an aneurism will be overlooked.

Aneurisms of the ascending portion of the arch are the aneurisms of signs; those of the descending aorta are the aneurisms of symptoms.

A sign of some value is the presence of the capillary pulse of Quincke, the existence of which is probably due to the large reservoir, into which the blood can flow back during cadiac diastole. Inequality of the pupils from pressure upon the sympathetic fibres, when present, is a sign of distinct corroborative value. Unilaterial flushing and sweating are of more decided value, but they are, for some reason, less frequent than is the pupillary inequality.

Pressure upon the intercostal and lumbar nerves may for a long time be the only sign of aneurism.

Doubtless most of the distressing cough and possibly some of the peculiar alterations of the voice, may be due to pressure upon the trachea. Drummond's sign, elicited by placing the stethoscope over the manubrium, have the patient take a full inspiration and slowly allow the air to escape through one nostril, is due to the whiffing character imparted to the air-column by the pulsating tumor. Pressure upon the left bronchus gives us some valuable signs of aortic aneurism. Even a small aneurism, if so situated as to press upon the left bronchus, will cause rhythmic downward excursion of this tube. This movement can be appreciated as a distinct downward "tug" of the thyroid cartilage when the finger is placed below the beak of the larynx.

Cardarelli's sign of lateral movement of the larnyx closely resembles the precedent, save for the direction of the movement.

Long-continued pressure on a bronchus leads to retention of secretion, fetid bronchitis, and bronchiectasis, while pressure of the bronchial arteries may lead to the onset of pulmonary tuberculosis.

Pressure upon the esophagus is in many cases the cause of early and serious interference with the taking of food. The association of dysphagia and persistent intercostal or deep-seated thoracic pain should suggest the possibility of pressure by aneurism of the descending thoracic aorta.

The sudden onset of paralysis, of hematuria, of splenic pain with enlargement of the area of splenic dulness, of melena and umbilical pain with symptoms of intestinal

obstruction should cause one to think of the occurence of embolism from the interior of an aneurism.

To pressure upon and erosion of the vertebræ is due much of the pain of aneurism.

The other signs mentioned are Scheele's, Perez's, and Glasgow's. The first the author considers a hazardous proceeding. It consists of contentaneous pressure upon the crural arteries on the two sides, giving rise to pain in the region of the aneurism, with momentary disappearance of the systolic murmur over the tumor and enlargement of the mass. The sign discovered by Perez is the creaking sound heard on auscultation over the sternum in cases of anterior mediastinitis when the patient raises and lowers the arm from the shoulder.

Glasgow's sign the author has failed to find in the cases seen by him lately. It consists in the presence of a distinct thud in the brachial artery.

The Use of Formalin for the Preservation of Museum Specimens.

A. A. Kanthack, M.D. and E. H. Shaw, in the Therapist.

The most important problem with which the curator of a museum has to deal is undoubtedly the preservation of color. Various methods have been described and recommended from time to time. Hitherto all of them proved so unsatisfactory that in England at least we have come to the conclusion, that since it is impossible to preserve color, it is best to prepare museum specimens in such a manner as to get rid of color, no color being better than an imperfect mottling or poor apology.

Like others, we at St. Bartholomew's have tried hard to discover methods. Last year we saw an abstract of a paper by Jores, giving the main points and directions of a new procedure full of promise. It was already well-known that formalin is a splendid preservative for eyes, which, after having been treated with formalin, are frozen, cut, and embedded in carbol-gelatine. We have obtained really beautiful results with eyes, and found that formalin preserves the color of the blood in the retinal vessels in an almost amazing manner. The method recommended, therefore, commended itself to us, because formalin was the preservative advocated, and we already knew its virtues. We at once proceeded to employ it, but not having had an opportunity—until recently—to procure the original paper, we had to experiment on our own account, adhering strictly to the solutions recommended, but finding out all the other steps by careful experimenting. We may at once state that the results obtained by us by our no doubt modified application of Jores' method of preservation were highly satisfactory.

Method I—Jores's Method. Our *modus operandi* is as follows:

1. The specimen to be preserved is first rinsed in cold tap water, in order to remove any blood, mucus, or other secretion from the surface.

2. It is then placed in the following solution:

Formalin, 6 parts.
Tap water, 100 parts.
Sodium chloride, 1 part.
Sodium sulphate, 2 parts.
Magnesium sulphate, 2 parts.

Great care should be taken to arrange and place the specimen in this solution in such a way as to preserve its natural shape. This we do either by supporting it lightly with cotton or wool, or, as in the case of the kidney or liver, by hanging it up in the solution by means of a thread, which must be drawn through the surrounding loose cellular tissue, and not through the substance of the organ. Nor should the specimen be allowed to strike the sides of the vessel in which it is suspended.

3. If the original cut surface or the natural surface of the specimen is to be preserved, the specimen should be left in the formalin solution for about forty-eight hours, and then transferred to pure methylated spirit (No. 1) for about ten minutes.

4. At the end of this time it should be removed to fresh methylated spirit (No. 2). While in this spirit it should be carefully watched. At first the color, which his dis-

appeared to a great extent in the formalin solution, gradually comes back; but soon, after about half to one hour, it begins to fade.

5. Immediately it begins to fade, the specimen must be taken out of the spirit and placed into a mixture of glycerine and distilled water (equal parts) to which a dash of pure formalin should be added.

6. In this glycerine mixture the color becomes intensified, and regains much of its natural appearance. The specimen finally must be mounted in the same glycerine mixture.

With this method, as we have demonstrated at our annual exhibition at St. Bartholomew's Hospital, we have obtained extremely satisfactory results—results which surpass anything ever obtained with any of the older methods of preservation.

Method II—Kaiserling's Method.

1. The specimens are washed as before, and then with the same precautions arranged or suspended in the following solution:

Formalin, 750 c.c.
Water, 1,000 c.c.
Pot. nitrate 10 grms.
Pot. acetate, 30 grms.

As this solution contains a much larger proportion of formalin, the specimens are hardened and fixed in much shorter time, and also much more satisfactorily even than with Jores's solution.

The specimens should be left in Kaiserling's solution for twenty-four hours.

2. They must then be transferred to 80 per cent. methylated spirit for sixteen hours (*i. e.* over night), till the original color is more or less restored.

3. They are kept in pure spirits for two hours, and

4. Finally placed in a mixture of glycerine and water, to which some acetate of potash may be added. It is not necessary to add to the acetate of potash— in fact, it seems better to add a dash of formalin to the diluted glycerine. The acetate of potash sometimes renders the glycerine slightly milky or opalescent, which is very disturbing, and moreover the acetate apparently has no special advantage over formalin.

This method has given us, we may venture to say, really beautiful results. The color may not be quite natural; that perhaps could hardly be expected, but a museum specimen preserved in this manner affords a strange pleasure and a source of excusable pride to a curator. Nutmeg livers, bronchopneumonias, tubercular lungs, and other diseased structures become recognisable.

It may be asked whether the color is permanent? That is a question which, like Kaiserling, we are not quite prepared to answer yet; but we know already that specimens kept for three or four months, unshielded from the light, have not lost anything in color, freshness and beauty.

No doubt the methods are capable of further improvement, and, what is also important, of being made cheaper. Glycerine is expensive, but we hope to find a cheap substitute for it. Formalin, no doubt, has achieved more than any other preservative, and must become the recognised fixative. We must, however, end with two words of advice: First, the specimens must be carefully watched; too much attenton cannot possibly be bestowed upon them as they are passed from one solution to another. Second, those who have to handle the specimens should remember that formalin is a strong irritant, and roughens the cuticle, so that it is well to use a pair of forceps, instead of diving into the formalin solutions with the unprotected fingers.

Hyperthrophied and Dislocated Liver.

J. A. Westerfield, M.D., in Hot Springs Medical Journal.

Mrs. G., aged about 25; first confinement with twins; very difficult labor. A few months before next conception noticed a lump in left iliac region, conception occurring about eighteen months after first labor. In due course of time was delivered of a healthy child with no unusual difficulty. At this time the enlargement was noticed extending from a little above the spine of right ileum, transversely down to the left groin. Twelve months from this time she presented

herself for examination (October 1, 1896). My associate, Dr. J. H. Westerfield, and myself made the examination. The pelvis presented a general deal board hardness, per vaginam, uterus slightly movable. There was a firm hard tumor extending from about one and a half or two inches below the ribs of right side in a diagonal direction down to left iliac region, the line passing two or three inches below the umbilicus. You could pass your fingers down over the enlargement from above, presenting the same appearance felt when examining an enlarged spleen, only you pass your fingers from below up under the spleen, and was apparently of about the same destiny of the spleen. The abdomen was opened on Nov. 9, 1896, and instead of finding a fibroid, the mass was liver, the lower border of it being adherent to the under surface of the symphysis pubis, its posterior surface to the anterior surface of the uterus. There was no omental structure to be found in the abdomen. The absence of omentum was the first point that was noticed as unusual. The liver was held against the posterior wall of the abdomen by peritoneum, not unlike a very short mesentary. The diagnosis was verified by the absence of the liver in normal position, and by fissures in the mass, and its general appearance. The gall bladder was not found, the mass being firmly fixed to posterior abdominal wall, was not easily manipulated, and was afraid of rupturing some important structure. Under tonics the woman's health has been much improved, and she is now attending to her duties at her home. I consider such displacements as rare, and offer this as an excuse for reporting the case. The woman had up to this examination suffered greatly from metorrhagia and "cramping" in the pelvis. At this time, January 10, the mass is appreciably smaller, and patient comparatively comfortable.

It is not unusual to see an enlarged liver filling the entire abdomen, but one whose upper border should be as much below the point where the lower border should be is not a common occurrence. The best information at my disposal is that it is most frequent in women who have borne children, leaving the wall of the abdomen lax and unable to furnish the accustomed support to the organ.

Hysteric Clonic Spasm of the Wrist.

By David Riesman, M.D., in the Philadelphia Polyclinic.

In a former issue of this journal I described some examples of hysteric disturbances of the respiration; in the present instance I wish to report a case of clonic spasm of the flexors and extensors of the wrist, in all probability depending on the same disease, namely hysteria.

Mrs. T L., a fairly intelligent Russian woman, 40 years of age, was sent to my nervous clinic at the Northern Dispensary by Dr. Fleisher.

She has had six children and two miscarriages, and was in good health up to the birth of her second child. The family history is negative.

The second labor, which occurred fourteen years ago, was very difficult; it was preceded by severe hemorrhage, and was complicated, it appears from her narrative, with placenta prævia. On the second day of her lying-in the patient was frightened by a fire that had broken out near her home, and on the following day was seized with generalized clonic spasms of the extremities, which persisted for five days. At the end of that time the movements ceased in all the members except the right arm, in which they have continued with intermissions until the present day. She was treated in Russia principally by baths, through which the movements were controlled for periods varying in length from six to nine months. Six years ago she came to America, and since then the spasms have been much worse, scarcely ever subsiding for more than fifteen minutes when she is in repose. During manual work they always cease. They also abate or disappear entirely at meals, especially when she feels well; when fatigued or indisposed, they may interupt her while she is eating, and on one occasion she scalded herself with hot tea which the jerking of the

arm had caused her to spill. As already stated, the movements are well-nigh constant when she is sitting quietly; they are intensified when she is under observation and during excitement. They cease during sleep.

Since the existence of the spasm the patient has also been troubled with palpitation of the heart, which usually accompanies the movements, and subsides when they do.

The patient is very excitable; her sleep is poor—as soon as she lies down she experiences a feeling of anxiety and dread, and the little slumber she snatches is troubled by unpleasant dreams. In appearance she is well-nourished, but pale, and habitually has an expression of suffering in her countenance. There is a double murmur in the aortic cartilage, the systolic one being also audible in the vessels of the neck, while the diastolic sound is transmitted over to the left and down toward the apex. A very distinct capillary pulse is present, and Corrigan's phenomenon is fairly well marked.

But the most striking feature presented by the patient is the constant rythmic flapping of the right hand, produced by a rapid alternating flexion and extension of the forearm muscles. The movements in the beginning are small, but rapidly grow in amplitude until the entire arm is shaken by their force. When the hand is resting upon anything, as the knee, a loud, slapping noise is made.

The movements very much resemble the flapping of a bird's wing, and *flap-wing spasm* would not, I believe, be an inappropriate designation for the condition.

When the patient is agitated the movements increase in intensity, and I could bring them on when they had momentarily ceased, by gazing intently at her hand, or speaking about her in such a way that she would know she was the subject of conversation. I have, unfortunately, no record of the rapidity of her movements. Not having heeded that point at her first visit, an unexpected improvement deprived me of further opportunity. Sensibility to touch was not disturbed.

On account of fugitive pains in the muscles I prescribed a mixture of potassium iodid and sodium salicylate. In a few days the patient returned, her condition much ameliorated, but she was suffering from iodism, and complained of weakness. The dose of the mixture was reduced one-half, and a pill of iron, quinin, and strychnin ordered.

On her third visit the spasm had nearly ceased, and since then—September 15, 1896—she had been practically free from it, and considers herself cured. No one was more astonished at this result than I, in view of the fact that the affection had existed fourteen years, and the last six had to all intents and purposes been continuous. Certainly, the medical treatment had nothing to do with the unexpected outcome, which can only be ascribed to suggestion.

The patient has consulted me frequently since for ailments referable to her cardiac lesion; the arm has remained well.

A localized spasm of the kind described, might either be due to some distinct organic lesion of the nervous system, or it might be of the type we are wont to call functional. A tumor, a patch of sclerosis, polioencephalitis, or porencephaly, involving the motor area of the brain, or a lesion in or about the internal capsule (cf. posthemiplegic chorea) might produce abrachial spasm.

Of spinal diseases capable of provoking it, we may mention tumor of the cord or of the meninges, and a sclerotic or myelitic focus. The long duration of the spasm, its unchanging character, its rapid disappearance, as well as the absence of other grave symptoms, speak against the existence of any such coarse lesion as is implied in the foregoing series. We are forced to consider the condition a neurosis, and its general course and termination accord best with the interpretation that it was due to hysteria.

The Cause of Baldness.

Maryland Medical Journal.

This is one of the interesting questions now under discussion by bacteriologists. Principal among those who are thus engaged is Dr. Sabourand, a former pupil of

the Pasteur Institute, who is conducting his researches at the St. Louis Hospital in Paris. For four years, says the *North American Practitioner*, he directed his attention largely to the study of the pathology and treatment of tinea tonsurans, seeking a method for the destruction of the tinea fungus when it has invaded the root of the hair.

In the course of his studies Sabourand came to the conclusion that if the loss of hair was due to microbial intoxication the toxins of these micro-organisms would be capable of producing alopecia. He therefore devised an experiment which seems to definitely settle the question that baldness is due to microbial infection. Having made a culture from the suspected organism on a liquid medium, and filtered it through porcelain, he made injections of the filtrate beneath the skin and in the muscular tissues of a rabbit. The result, was that the animal began immediately to shed its hair, and at the end of forty days general alopecia was established. The specific bacillus which abounds in seborrheic plugs was the one employed, and this important fact was established, namely, that when the toxin is inoculated in the deeper structures of the animal it yet retains its elective power for the destruction of the papillæ of cutaneous hairs.

In searching for the bacillus which might be the cause of baldness, Dr. Sabourland was led to make a series of interesting studies of alopecia areata, showing that the baldness started from a central point and spread in every direction by a creeping process, gradually enlarging the involved area, also that the activity of the pathological action was greatest along the margins of the tissues as they became involved. Further investigations have also led to the conclusion that seborrhea and alopecia areata have a common origin, being developed by bacillus common to both affections. Whenever the baccillus invades a follicle the hair papilla is surrounded by an afflux of wandering cells. The sebum which is effused and which forms sebaceous plugs beeomes the culture medium in which bacilli by the millions are developed. As a result the hair papillæ becomes gradually atrophied, the hairs are less perfectly developed, and finally they die out and are expelled.

The germ-bearing sebum affects the hair follicles one by one. In this way baldness is gradually established. The infection remains endemic so that the hair is not renewed. Finally by progressive sclerosis all the elements of the hair follicle undergo change of form, and baldness is permanently established.

The fact that they are of microbic origin brings such diseases as seborrhea, tinea tonsurans, ringworm and alopecia areata into close relationship, and the discovery of their microbic origin gives a key, long sought, which reveals to us their nature, and permits a more intelligent dealing with their specific causes.

Carbolic Acid Burns.

Lehmann in Canadian Practitioner.

After finishing a post-mortem examination, I washed my hands thoroughly with soap and water under a tap. Part of the contents of an eight-ounce bottle labeled carbolic acid 1 in 20, was poured over both hands. The skin immediately turned white, intense burning and tingling commenced. Endeavored to wash off acid with water. A colleague recommended alcohol, of which a bottle was soon produced, and hands thoroughly washed with it. The burning and tingling almost immediately ceased. Some time afterwards five spots on the forearms, where the acid had dropped, were red and burning. Alcohol had then no effect. These were brushed over with saturated solutions of picric acid in water.

Results—Shedding of superficial layers of skin on hands; staining of five spots on forearm with picric acid.

Conclusions.—(1) Bottle contained 4 ounces of fluid carbolic acid undiluted. (2) Alcohol is but immediate treatment for burns with carbolic acid because the acid is soluble in 6 in 1 of alcohol. (3) Saturated solution of picric acid in water, in this, a in other superficial burns, is good treatmen